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ABSTRACT

Designed to provide online resources for upper secondary students studying for the Higher School certificate (HSC), the NSW HSC Online Project aims to make quality resources easily accessible to rural and regional users in New South Wales (Australia). The project is a collaborative venture of Charles Sturt University and the New South Wales Department of Education and Training. Moving into its second phase in 2001, the project developed a new Web site and undertook large-scale content development. Content is currently available or undergoing development in 38 subject areas, including accredited vocational education and training subjects. This paper describes: (1) the growth and development of the project during its first phase (1996-2000), including early challenges associated with technology, issues of access and equity, and initial low traffic on the Web site; (2) innovations of the "second-generation" Web site, including visually friendly features, portfolio features for teachers, and resources for parents; (3) the commitment of resources needed, in terms of financial support, personnel time, technical assistance, and ongoing Web site maintenance; (4) continuing issues of access to technology in rural and remote areas, competition from private vendors, and the need to keep resources current; and (5) the value of project resources to rural teachers. (SV)

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Online teaching and resources: The New HSC Online Project 2001

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Abstract

The NSW HSC Online Project (a joint venture of Charles Sturt University and the NSW Department of Education and Training) began in 1996. Designed to provide online resources for students – and their teachers – studying for the Higher School Certificate, one of its aims was to make quality assured resources easily accessible to rural and regional users. The project over its first four years was very successful. With the introduction of new HSC syllabuses in 2001, a second phase began, an entirely new website was developed, and large-scale content development has been undertaken. The new website was officially launched in April 2001. This presentation will include a demonstration of selected features of the new website. The main points for consideration will be:

- the value of such internet-delivered resources for upper secondary students and teachers;
- new features available from such 'second-generation' websites;
- the resource implications of extensive, collaborative online resource development ventures;
- the value of this particular resource for rural educators.

Introduction

Despite the bursting of the dot.com bubble and consequent 'tech-wrecks', there remains a high level of interest in online teaching and learning. An online university is an element of Labor Party education policy; and many Australian universities are already involved in online course delivery. Some are members of international consortia such as Universitas 21-Thomson Learning (a network of universities in a number of countries developing global e-education). At Charles Sturt University (CSU) we are already involved in what I shall refer to as a 'second-generation' website for online teaching and learning, the product of the NSW HSC Online Project that began in 1996 as a collaborative venture of the University and the New South Wales (NSW) Department of Education and Training (DET).

Designed to provide online resources for students – and their teachers – studying for the Higher School Certificate, one of the aims of NSW HSC Online was to make quality assured resources easily accessible to rural and regional users. The project

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over its first four years was very successful. With the introduction of new HSC syllabuses in 2001, a second phase began, an entirely new website was developed, and large-scale content development was undertaken. The new website was officially launched in April 2001.

This presentation includes a demonstration of selected features of the new website (http://hsc.csu.edu.au).

Points to be considered include:

- the use of such Internet-delivered resources by upper secondary students and teachers;
- new features available from such 'second-generation' websites;
- the resource implications of extensive, collaborative online resource development ventures;
- the main challenges in the second phase of the project; and
- the value of this particular resource for rural educators.

Brief history of the NSW HSC Online project

The concept of a website to support teachers and students preparing for the NSW Higher School Certificate (HSC) was developed within CSU and endorsed by the NSW Minister for Education and Training, the Hon. John Aquilina, in 1996. 'Major players' with an interest in the HSC (the NSW Board of Studies, the Joint Council of NSW Professional Teachers' Associations) became involved in collaborative support, and in July 1996 the project became a joint venture of the University and the NSW Department of School Education (subsequently renamed the Department of Education and Training).

The aims of the project were closely linked with the mission of CSU in its own geographical region, including:

- support for all students studying for the NSW HSC and, in so doing, enhance particularly the prospects of students in rural areas; and
- support for teachers preparing students for the NSW HSC, particularly those teachers working in rural schools.

When the project began in the mid-1990s, other aims included communication possibilities that have now largely been catered to by developments in telecommunications, computer provision in schools and public take-up of Internet access (e.g., the project included assistance to schools in establishing communications via the Web).

Work proceeded during 1996 and 1997 with project management structures being established, technical work on website design and development occurring, and teams preparing materials for the various HSC subjects. The project site was placed 'live' on the Internet in March 1997, and it was officially launched by Minister Aquilina in July that year.

The website included not only information relevant to HSC subjects but also hints on study methods and examination techniques, materials on the use of technology in teaching and learning, links to Australian school home pages and to teachers' professional association home pages, and information on careers and post-school options.

The early years of the project presented challenges. By 1998, for example, in spite of considerable effort to promote it via the media and professional networks, the site was still comparatively little used. Students seemed to be relying on their teachers to direct them to use the Internet for learning purposes, and teachers seemed relatively slow to integrate use of the website into their teaching practice. It also proved quite difficult to convince teachers to contribute materials to the project. Teachers' reactions were not unexpected given the relative lack of professional development opportunities in the use of online teaching available to them at that time.

Another set of challenges was associated with technology and issues of access and equity. The site was constructed to be accessible to users of low-end machines; and easy access for users in remote and isolated areas has been a priority. However, target groups in rural and remote schools were generally least likely to enjoy easy computer and Internet access either at school or at home. As the project has developed and more sophisticated features such as video and sound been added, project managers have

recognised that some users will continue to be limited by narrow bandwidth in what they can easily download from the site.

As development of the website continued, more subjects were added. By mid-1999 there was content for 25 subjects on the site with five more under development. In all cases, published materials were relevant to the syllabuses, and all material was quality assured. This applied to links to other websites around the world, which were checked for relevance and to ensure their appropriateness to student users. The site also provided links to syllabus documents, to past examination papers and to examiners' comments.

Statistics on use indicated considerable growth in 1999. The number of pages delivered per month between mid-1997 and the end of 1999 showed a general upward trend, with peaks occurring prior to the trials and the HSC examinations. A peak was reached in October 1999 with more than 500 000 pages delivered that month.

Collaboration with mainstream media in 1998 and 1999 led to greater traffic to the site. Cooperative arrangements between the partner institutions and the *Sydney Morning Herald* (*SMH*) provided for *SMH* publication, over successive weeks, of study guides on HSC subjects to assist students in their exam preparation. In the hardcopy newspaper version, the study guides contained references to the project, and from the *SMH*'s own website there were direct links to NSW HSC Online. In 2000, in addition to continuing collaboration with the *SMH*, the project reached an agreement with Rural Press, and this led to extensive publicity in rural and regional newspapers to supplement metropolitan coverage.

By 1999/2000 the site provided a substantial resource for students and teachers with materials for some 30 HSC subjects available, as well as the range of other services and links referred to. However, the decision in 1999 to change the NSW HSC and introduce new syllabuses in 2001 meant that the first phase of the project had to come to an end. Because the proposed changes were so substantial, there was debate about future directions for the website: should the original site be modified to take account of changes, or should a new site be developed? It was decided in late 1999 that a

completely new website would be developed, with the date for it to 'go live' eventually being set for early 2001.

A significant injection of funds from the Ministry enabled the DET to support Key Learning Area managers and teams to develop content for the new site, and CSU assumed responsibility for the technical work involved in developing a new site. This was to include an entirely new design and incorporate features recommended by users in their responses to project evaluations conducted in 1998 and 1999. Minister Aquilina launched the new site on 2 April 2001 at the Australian Technology Park, Sydney.

The New HSC Online 2001

a. Online resources and their use

This second phase of the project promises once again to provide a substantial bank of resources. By launch date the website had published content for 23 subjects, and development of another 15 is proceeding, including accredited vocational education and training subjects.

An important question now is just how extensively the site will be used. Data from the final year of the first phase of the project are indicative. By 2000 the site was well known and extensively used. It was accessed not only by the original target audiences, rural and regional users, but also by students and teachers in metropolitan schools in NSW, elsewhere in Australia and overseas. For the year as a whole more than 4 800 000 pages were delivered. For the month of October 2000 (close to HSC examination time) more than 1 million pages were delivered. During the exam period itself there were some 80 000 hits per day. In his speech at the launch of the new site in April 2001 the Vice-Chancellor noted that such traffic exceeded use of the most popular youth site in Australia, ABC's Triple J website. Monitoring of site traffic has also revealed quite significant international use (especially from Canada and the United Kingdom), particularly between 11.00pm and 6.00am.

Given these past use statistics, plus the fact that this second phase of the project is catering to users at just the time when they need resources and guidance for the range

of new HSC syllabuses, one can be optimistic about these resources finding a large user base. Since the official launch in April the monthly average of pages delivered has been in excess of 300 000 (an average of more than 10 000 pages delivered per day).

In relation to the quality of resources it is important to note that all content is tailored to the syllabuses and is quality assured before electronic publication. Moreover, the skills and experience of classroom teachers and subject specialists have been brought together with those of web designers and experienced technical staff to ensure a quality site that is user-friendly.

b. 'Second-generation' website features

The new website offers a range of novel features that can be considered characteristic of a 'second-generation' educational site. It includes substantial content similar to text-based resources, but presented to facilitate screen-based learning. Experience of online learning environments has shown that it is necessary to present materials in 'visually-friendly' forms, to avoid lengthy 'chunks' of text on-screen, to think about the infinite and non-linear Internet environment rather than the closed and linear format of textbooks.

In addition, this new site incorporates various innovative features such as:

- sound files on language nodes;
- audio/video clips to enhance the learning experience;
- self-assessment tools; and
- virtual learning environments, e.g., a virtual excursion among geography materials on rainforests.

Other new features of the site, to assist teachers and parents, are:

- portfolio-style materials for teachers to use as part of their own professional development, especially designed to develop their skills in teaching in the online environment; and
- resources designed to assist parents in supporting their children through the HSC experience.

c. Resource implications

Having reached this point in the project – and given the current pressure on tertiary institutions to become more involved in e-education – it is apt to look briefly at the resource implications of this project. The project has necessitated a substantial commitment of resources by the institutions involved. Funds from the Ministry enabled the DET to support teams of teachers and academics developing the content for publication for all of the subject syllabuses. CSU's input has included assistance in project management and a technical team within the Division of Information Technology to design the new website, publish all material and facilitate the incorporation of greater levels of interactivity. Substantial management and support structures, and consequent travel and teleconferencing, have been necessary to foster and sustain the large collaborative effort of the two phases of the project. Availability of additional funding and periodic release of teachers from 'normal' teaching duties to work on content development have been indispensable – and should encourage pause for thought if we believe we can undertake substantial e-world ventures in the context of 'normal' activities. (Experience beyond this project indicates that development of a single semester-long university subject for online delivery is likely to cost in the order of $60 000.)

In the volatile Internet environment, the initial inputs, of course, are not sufficient for success. Website maintenance is critical to ensure a fault-free resource that does not suffer from 'link-rot', that provides links to emerging relevant resources, that attracts users through changing topical information and 'current news' on the site, and that maintains currency in relation to examiners' comments and study skills and examination preparation hints. Thus the resourcing of any online teaching and learning site must cover maintenance as well as initial development.

d. Major challenges

In this second phase of the project access remains an issue. Some students and teachers in rural and remote areas may not have easy access to computers. Those in areas not well served by telecommunications infrastructure will experience difficulties regarding reliable Internet service provision and adequate bandwidth. Where services are available but inadequate, downloading materials may be frustratingly or

impossibly slow, with the more sophisticated multimedia features of the site being difficult to use.

Nonetheless, Australia is known for generally rapid take-up of new technologies, and Internet use has developed rapidly. The project is based on the assumption that telecommunications provision in rural areas will continue to improve along with increasing computer access in rural and remote schools.

Another challenge is for project teams to fill gaps and have satisfactory content across the entire range of HSC syllabuses. It is not easy to persuade often already 'overstretched' teachers and academics to join content writing teams. The sheer scale of the project makes content preparation an immense task.

Second-generation sites also face greater competition than was the case in the mid-1990s. There have been efforts (not entirely successful) by private web providers such as WorldSchool and Ozseek to offer online tutoring to HSC students and to customise packages according to individuals' subject choices. The great comparative advantages of the NSW HSC Online project are that it is free to users and it enjoys the credibility afforded by the collaborating institutions and the quality assurance procedures.

Finally, there is the general challenge for those involved in a project such as this of keeping up-to-date with what we learn about learning in virtual environments and being able to modify what the website offers to make the best provision for learners' needs. This is linked with the general point about maintenance of any website, but the more fundamental issue is just how much we know about the pedagogical implications of e-learning. While we have had the benefit of feedback from students and teachers in evaluations of the first phase of NSW HSC Online, particularly about presentation of material in the e-environment, we still have much to learn about effective teaching delivery and efficacious learning in an e-world.

e. NSW HSC online as a resource for rural educators

The new HSC Online website illustrates some of the changes in online educational delivery since the mid-1990s. The e-world has been subject to rapid change, and web design features come and go rapidly. The new look of the 2001 site is important,

particularly for the main target audience in their late teens who are accustomed to the volatile environment of the Internet. Beyond 'the look', the new site's greater interactivity is also important for a generation of web-savvy users who are comfortable with, and expect opportunities for engagement with, such resources.

In summary, then, what is the value of this resource for rural educators? It is important to note that the site has always been seen as an adjunct to good classroom teaching and a supplement to existing resources; it has never been intended as a replacement for teachers. However, in recognition of the likelihood that rural and remote schools will be less well endowed with resources than many of their metropolitan counterparts, the NSW HSC Online project has always aimed to enhance the prospects of students in rural areas by providing easy access to relevant resources and to make rural teachers' tasks easier by so doing.

In an ever more resource-rich world NSW HSC Online offers:

- easy access to materials specifically written to address syllabus content;
- access to other resources, such as websites, selected and vetted for their relevance to the syllabuses and their appropriateness for use by upper secondary students;
- the credibility deriving from DET and Board of Studies support and involvement;
- assistance for students in developing their study skills and examination techniques;
- guidance for students beyond the HSC experience in the form of advice and resources on careers;
- online-relevant professional development opportunities for teachers; and
- materials for parents to assist them in playing a supportive role for their teenagers through HSC preparation and examination times.

So long as one has computer and Internet access – and this may by via the local library rather than school or home – NSW HSC Online is accessible at any hour of day or night; ...and it is free.

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